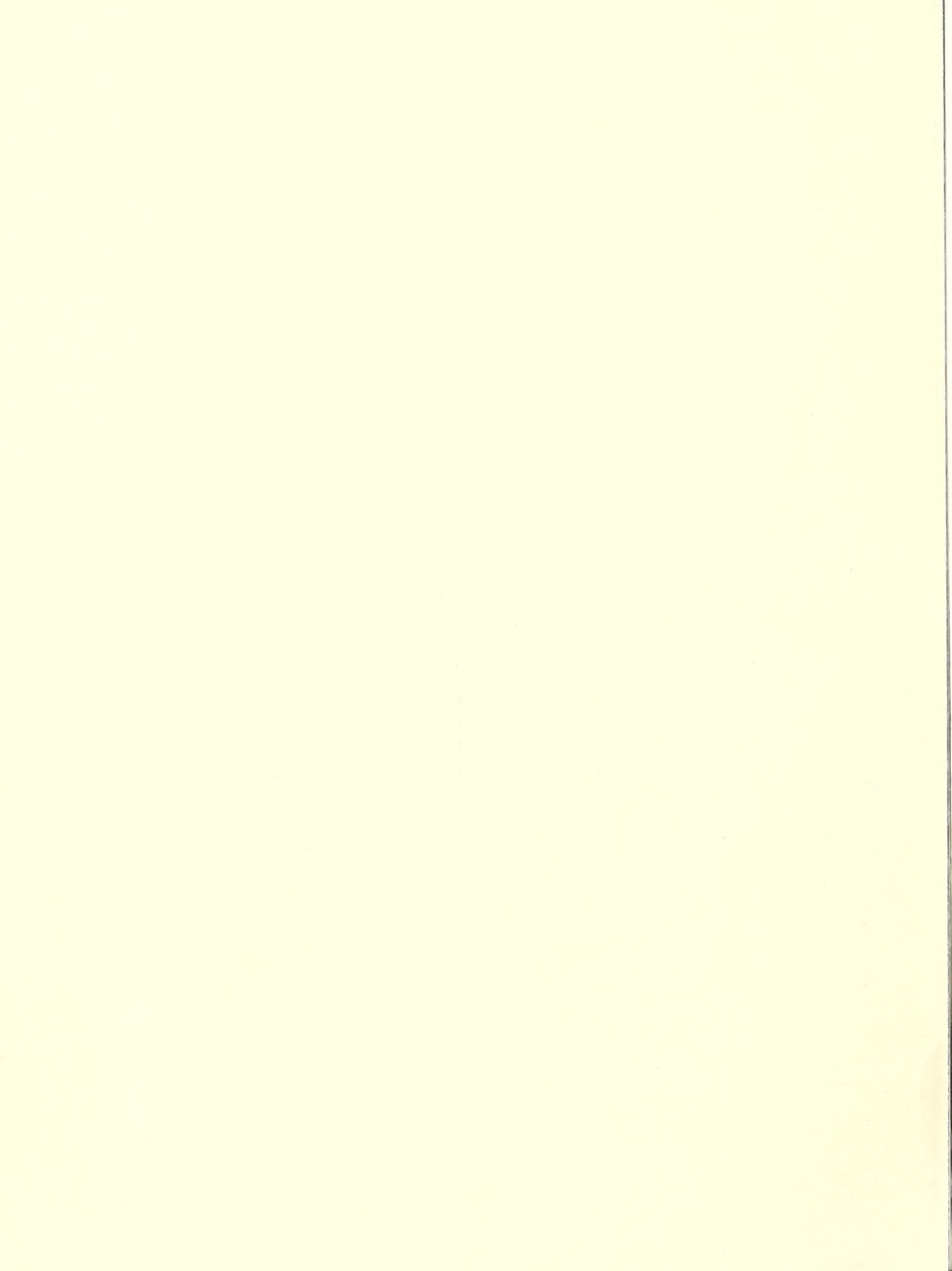


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November

1986

Volume 7, Number 8

Soil and Water Conservation News

United States Department of Agriculture
Soil Conservation Service



Soil and Water Conservation News is the official magazine of the Soil Conservation Service. The Secretary of Agriculture has determined that publication of this periodical is necessary in the transaction of public business required by law of this Department. Use of funds for printing *Soil and Water Conservation News* has been approved by the Director of the Office of Management and Budget through January 31, 1987. *Soil and Water Conservation News* (ISSN-0199-9060) is published 12 times a year. Postage paid at Washington, DC.

Magazine inquiries
Send inquiries to: The Editor, *Soil and Water Conservation News*, Public Information Staff, Soil Conservation Service, U.S. Department of Agriculture, P.O. Box 2890, Washington, DC 20013-2890.

Subscriptions
Send subscription orders to:
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

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From the SCS Chief

Helping Farmers Prepare for the Future

I know from personal experience and from many visits to local communities that there are high quality Soil Conservation Service and local conservation district officials throughout the United States.

I hope that every one of you will continue to strengthen your commitment to technical excellence and to caring and concern for farm and ranch families.

We need all of our best qualities—both technical and social—to carry out the spirit of the Food Security Act of 1985 in ways that respect the rights and needs of all producers.

The highly erodible land provisions of the Act will make it costly to farm without conservation for producers who ordinarily participate in several U.S. Department of Agriculture (USDA) farm programs and depend on that financial support, loans, or insurance protection.

The Conservation Reserve made possible by the Act will help many farmers to receive guaranteed income for 10 years, while gaining peace of mind that some of their most troublesome acres are well protected.

We need to help all farmers and ranchers understand the new options open to them, the possible financial effects of their decisions, and the close timetables. We also need to help them become aware of the resource trends in their county and State.

And then we need to step back and let producers weigh their choices.

If the decision is to become a conservation farmer, or at least to stop producing crops on erosion-prone fields, then let's proceed with good technical support as rapidly as we and our conservation district partners possibly can.

If the decision is "not now," we must respect the fact that there may be factors or needs that we don't understand or need to know. This is not a Federal land use bill, it is a vehicle for making USDA farm programs more consistent.

It is most important right now that we reach out to all producers, not just those we're used to working with or who already feel comfortable working with SCS and districts. They all need to hear about the new opportunities and possible new constraints.

Above all, be ready to help when asked.



Cover: Maurice Davis, SCS area range conservationist, inspects grasses on improved rangeland near Mobridge in north central South Dakota. In the background is the Missouri River. (Photo by Tim McCabe, former photographer, SCS, Washington, DC.)

USDA Accepts 5 Million More Acres into Conservation Reserve

On August 29, Deputy Secretary of Agriculture Peter C. Myers announced that the U.S. Department of Agriculture (USDA) had accepted more than 5 million additional acres of highly erodible cropland into the Conservation Reserve Program.

"We now have almost 9 million acres total from three signups," he said. "Our 5-year goal is to remove 40 to 45 million acres of highly erodible cropland from production for 10 years, and with this level of participation we feel we are well on our way to meeting that objective. It's obvious that more farmers have been seriously weighing the benefits of participating in the Conservation Reserve."

In this latest signup, more than 45,000 bids were submitted for almost 6.5 million acres. The accepted bids ranged up to \$90 per acre with an average of \$46.94 per acre.

Annual rental payments will compensate farmers for retiring highly erodible land from crop production. The amount of payment is determined by the bid per acre and the number of accepted acres.

Participants will also receive conservation payments of up to 50 percent of eligible costs of establishing trees and grass on the acreage placed in the

Reserve. The conservation payments will partially reimburse farmers for the one-time cost of establishing required conservation practices on the cropland.

Myers said land entered into the Conservation Reserve, as directed by the Food Security Act of 1985, will be ineligible for farming for 10 years and must be planted with permanent vegetative cover. "This program will bring many benefits, including the enhancement of wildlife habitat," he said.

To date, farmland signups total almost 9 million acres. During the first signup period, March 3-14, USDA accepted bids to enter more than 800,000 acres on over 10,000 farms into the program. Bids on that signup ranged up to \$90 per acre with an average of \$41.82.

During the second period, more than 3 million acres on nearly 23,000 farms were accepted. Accepted bids in this period also ranged up to \$90 per acre with an average of \$44.23.

Additional signup periods for bidding will be announced.

USDA Looks at Information Needs for New Conservation Law

Farmers need more information on the conservation provisions of the Food Security Act of 1985. They need it quicker. And they need all U.S. Department of Agriculture (USDA) agencies to send the same basic facts.

These were the main points raised at a USDA interagency conference held in Washington, DC, September 17-19 to get feedback on USDA information work related to the Food Security Act of 1985 and develop information strategies.

Conferees, who came from all levels of the Agricultural Stabilization and Conservation Service, Extension Service,

Farmers Home Administration, Federal Crop Insurance Corporation, Forest Service, and Soil Conservation Service, as well as a number of private groups, proposed that USDA develop national information materials that State and local offices could use or adapt.

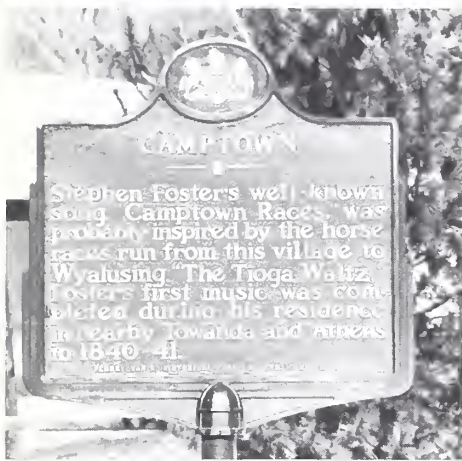
An interagency team of information and technical specialists will develop draft products, review the materials, and coordinate clearances. This should ensure that all agencies involved play an active role in developing information materials. Most importantly, it should lift the burden of producing information materials from State and field staffs, who will have as much work as they can handle serving the public.

Assistant Secretary for Natural Resources George S. Dunlop told the

group that it is USDA's job to explain to farmers all the options that are available to them as they strive to comply with swampbuster, sodbuster, and conservation compliance. Dunlop also emphasized the need for closer cooperation than ever before among the USDA agencies involved.

The overall goal of these new initiatives, said Dunlop, is to ensure farmers' use of sound conservation systems to improve soil and water resources as they produce food and fiber.

Camptown Pulls Ahead in Race Against Streambank Erosion



Camptown may have been immortalized in a song—but a good part of it was saved by a streambank stabilization project.

For more than a century, the world has seen this small village in northern Pennsylvania as portrayed in Stephen Foster's lighthearted "Camptown Races." It was a place where the horses ran all night and all day, where you could go with your hat caved in and come back with a pocketful of tin, where you could bet your money on a bob-tail nag and somebody would bet on the bay.

The real Camptown is in Wyalusing Township in Bradford County, just south of the New York State line. When Foster lived in the county in the 1840's, horses were raced from village to village and maybe the Camptown ladies really did, as he wrote, sing about a racetrack 5 miles long. But in recent years the song has changed.

"When I came here in the spring of 1983, the phones were ringing off the hook with people complaining about streambank erosion threatening their properties," said John George, district conservationist for the Soil Conservation Service.

An old hand-laid stone wall that held Camp Creek in place in Camptown was rapidly deteriorating. The streambanks were eroding so badly that a playground, post office, residence, and telephone relay station were all in danger.

"Parents were worried because an 8-foot-high streambank had eroded back under the fence at the playground," said Bob Stevens, township supervisor. "The retaining wall had fallen in under the phone station, threatening its stability. At the post office, a concrete parking slab was so undermined it began to pull away from the road. We put old beams and anything else in to fill the opening as a temporary measure."

What was happening in Camptown—and the rest of Bradford County as well—is typical of upland hilly regions with steep valleys. Streams continually cut away banks trying to change channels, often endangering private residences and businesses and public bridges and roads.

Property owners and local municipalities rarely have the financial and technical resources to deal with these problems.

To assess the seriousness of streambank erosion in the county, the Bradford County Conservation District conducted an inventory. In March of 1983, the district queried all 51 boroughs, towns, and townships in the county about streambank erosion problems, and about 75 percent responded with requests for assistance. During the spring and summer of 1983 the district inventoried and documented more than 50 sites, and within a year the district had received more than 200 calls for assistance.

There were a few surprises, however, when the district began studying criteria to determine which sites were eligible for existing State programs. Camp Creek in Camptown, for example, did not qualify for State assistance because of the existence of the old retaining wall, although the wall was rapidly losing its effectiveness. And, since the likelihood of obtaining funds from Federal and other sources did not appear promising, the district decided to form a special committee to find an alternative solution.

"We're a rural area and are known for our willingness to work together to get a job done," said Marilyn Bok, a county commissioner who chaired the committee. "This concept became the heart of our solution."

After much research, the committee proposed a program that would use rock-filled gabion basket retention walls. Although gabions are labor intensive, they were selected because workers and rock were readily available in the county and only small equipment was needed for installation. The result is an ongoing countywide streambank stabilization program that makes the best use of local resources.

Since the county and some of the municipalities had summer labor programs, the district secured free labor under the Job Partnership Training Act. SCS provided engineering assistance. Many of the municipalities were able to lend trucks and earthmoving equipment such as backhoes. The district helped to coordinate the

work, assist with permit applications, and in some cases supervise projects.

During the first year of the program, the bank erosion problem at the park in Camptown was corrected with the placement of 34 gabion baskets at a cost of \$3,000 for the materials. The following year, about the same number of baskets were installed to protect the relay station and post office.

"The conservation district crew did a great job," said Stevens. "They were down here so long we accepted them as locals. They were a great group of young men."

Another example of the program's success is in Ulster Township. After receiving district help the first year, Ulster required only technical aid in planning and implementing another project to be completed over a 2-year period.

"We're pleased with the project," proclaimed Ira Haire, district chairman. "We run the program on a zero budget. We charge the property owner a \$5 delivery fee for each basket and \$50 for administration, which covers tools and workers' mileage."

Overall, more than 20 sites of hazardous streambank erosion identified in the original inventory have been corrected through this program, or other State and Federal programs for which the sites qualified.

"Part of the success was knowing what help was already available and referring people to the right agency," said Haire. "Then the conservation district found a way to help those who couldn't get help elsewhere. We were able to save local people 60 percent of the improvement costs by using local resources."

Stephen Foster would have taken that kind of money home in a tow-bag.

Michael W. Lovegreen,
district manager, Bradford County Conservation District,
Towanda, Pa.



Streambank erosion had begun undermining the foundation of this telephone relay station (upper left of photo) along Camp Creek in Camptown, Pa. Now, a rock-filled gabion basket retention wall protects it and other buildings from further erosion.

Photos by Frederick E. Bubbs, public affairs specialist,
SCS, Harrisburg, Pa.

Illinois Takes New Approach to Resource Planning

In Mercer County's Donohue Run hydrologic unit, SWCD Board Chairman Pat McVeigh (left) and SWCD Resource Conservationist Bill Joseph discuss ways to keep the soil on this field and off the adjacent road. Sediment control is a high priority in Donohue Run's resource plan.



This subsurface drain line for a broad-based outlet terrace is one of many constructed in St. Clair County's Little Silver Creek hydrologic unit, where stream-flooding and siltation caused by field runoff were identified as chief resource concerns. Observing construction of this drain line with a local contractor is Keith Donelson (right), SCS's water resources planning coordinator for Illinois.



"It makes good sense to plan *with* people rather than *for* them," says John Eckes, State conservationist for the Soil Conservation Service in Illinois. "People support plans that they are a part of."

This philosophy underlies resource planning throughout Illinois. Two years ago, the SCS staff, in cooperation with soil and water conservation districts (SWCD's), began a special effort in 14 pilot counties to involve local people more closely in the resource planning process.

The main difference in their new approach is focusing on planning by hydrologic unit instead of along county or conservation district boundaries. "Hydrologic unit" is just a fancy way of saying "watershed," explains Deputy State Conservationist Billy Milliken. "We don't say 'watershed' because we don't want people to confuse our resource planning process with the Public Law 83-566 Small Watershed Program."

Hydrologic units

The hydrologic units are subdivisions of the 51 river basins in the State. SCS has divided those basins into 500 subbasin units of approximately 250,000 acres. From these multicounty units, the soil and water conservation districts in each county have delineated hydrologic units of 10,000 to 40,000 acres in size. The delineations depended on such criteria as community and landowner priorities, number and extent of resource concerns, number of operating farms, and existing or potential conservation projects. Keeping the size of the unit to manageable proportions was important.

Planning committees

The conservation district board and the SCS district conservationist select a grassroots planning committee to work on resource planning in a hydrologic unit. Committee members are key people who represent a wide range of local interests, from agriculture to banking, industry, and

government. Usually, six to eight people are on a planning committee. Says Ray Herman, State resource conservationist for SCS, "Involving more people through a planning committee allows us to look at the bigger picture and to look at more resource concerns than just soil erosion."

Planning committees do the following: identify important resource concerns, establish a technical advisory committee, keep the public informed of committee activities through newsletters and media coverage, authorize resource inventories and evaluations, develop alternative resource strategies for the plans and present them at public meetings, and determine a final plan.

Field experiences

SCS field people working with hydrologic units in pilot counties have found that this program delivery system broadens their perspective of local resource concerns. It also helps them to work more efficiently.

SCS District Conservationist Gary Fak in McLean County found that once a good cross-section of leaders from cities, rural areas, and various institutions got together to represent a hydrologic unit, they took on a good deal of the planning workload.

Working with six hydrologic units in the planning stage, Fak discovered that the problems he perceived were not necessarily the problems perceived by the committees. The planning committees have him looking beyond the scope of traditional SCS issues, such as soil erosion and water quality, and into socioeconomic problems that he had not previously considered.

More than ever before, Fak and the district board are working with urban people and their concerns. People in hydrologic units in areas subject to intense urban sprawl and industrialization, especially around Bloomington, are trying to assess land capability and control erosion, sedimentation, and stormwater runoff.

For predominantly agricultural Mercer County, planning by hydrologic unit is paying dividends, particularly in citizen awareness of the off-site benefits of soil

and water conservation. In two pilot watersheds, Donohue Run and Douglas Creek, for example, SCS District Conservationist Melissa Westerlund and her staff have seen a marked reduction in sediment accumulation in streams and roadways. They credit conservation measures that landowners applied after a road commissioner told the planning committee about the high cost of removing sediment.

"Community awareness—neighbors working together" is the real advantage of hydrologic unit planning in the opinion of Bill Joseph, SWCD resource conservationist in Mercer County. "Time and time again we see people work together at the resource planning meeting, talking about a common creek and a common problem."

Westerlund's staff find that planning by hydrologic unit is improving their operations. SCS Conservation Technician Richard Bemis notes, "You can concentrate your effort, money, and transportation in one area and get a lot of work done in a short time. Planning by hydrologic unit does away with the shotgun approach, which gets a lot of conservation on the land, but makes it difficult to see the results."

St. Clair County's SCS District Conservationist, John Harryman, recalls that in the mid-1970's the district board realized conservation programs "cannot be *our* programs. They have to be the *people's* programs, and we are going to have to go from the grassroots up." According to Harryman, the district was also "quick to realize that SCS and the soil and water conservation districts cannot be all things to all people at all times." Other agencies have to be brought into the planning process.

Local planning committees have helped solve flooding and road siltation problems in St. Clair County's Ash-Loop Creek

Watershed, which supports agriculture, an airbase, and urban development. By listening to the concerns of farmers and urban and military leaders, SCS and the Illinois State Department of Transportation were able to design remedies that were supported locally.

In the highly erodible bluffs of western St. Clair County, the district is helping to establish local planning groups representing the many part-time farmers not accustomed to working with conservation agencies. These groups are working with SCS, other Federal and State agencies, and local equipment and chemical dealers to raise local awareness of nonmechanical practices such as no-till.

Said Harryman, "Our time is better used; we're putting fewer miles on the vehicles per acre of ground treated. And we're able to generally get things done quicker, cheaper, and more efficiently. The contractor can work in a given area and not move equipment all around. If you are terracing, you can get materials quicker because the distributor can dump them all in one spot rather than truck loads all over."

Computer automation

With the adoption of program delivery by hydrologic unit, microcomputers are among the most critical needs of SCS field offices in Illinois. Eventually, field offices will have automated case files to generate progress reports by hydrologic unit, watershed, or river basin.

Keith Donelson, SCS's water resources planning coordinator for Illinois, reports that SCS, the University of Illinois, and State agencies are trying to develop models that will determine the off-site and onsite benefits of conservation practices and systems in a specific hydrologic unit. The models are being designed to operate on the FOCAS (Field Office Communication and Automation System) equipment used agency wide.

Conservation Briefs

The future

Resource planning by hydrologic unit has a strong future. It has the support of the Association of Illinois Soil and Water Conservation Districts and many Federal and State agencies. Its benefits for all participants are clear:

- In the hydrologic unit, people meet on their own ground to address their own concerns. They get to hear about a variety of possible solutions, not just a single government program.
- The soil and water conservation district broadens its base of key people who understand local needs and who support conservation. It also gains recognition as the focal point of resource planning.
- SCS benefits from the operating efficiency of the resource planning process and from the data base of onsite and off-site benefits of conservation. SCS also gains the chance to show that it can coordinate its efforts with local people to address a wide variety of resource concerns besides controlling soil erosion.

SCS's Billy Milliken considers resource planning by hydrologic unit especially important in an era of Federal spending cuts: "We simply cannot get the job done by knocking on doors and dealing one-on-one. We have to get more people involved. The more people we contact, with or without cost sharing, the more people there'll be who will apply conservation."

David L. Moffitt,
editor, Public Information Staff, SCS, Washington, DC

Range Improvements In Montana Foothills

The Great Plains Conservation Program (GPCP) is bringing changes to the foothills of Montana's Highwood Mountains. Rancher Ken Maki, for example, has greatly improved his rangeland northeast of Belt through a GPCP contract with the Soil Conservation Service.

Under the GPCP contract, SCS provides Maki with technical and financial assistance through the Cascade County Conservation District to implement a conservation plan that he and SCS worked out together. The technical assistance is critical, Maki said, because his ranch is at a high elevation (between 4,500 and 5,000 feet) that requires special attention to site and species suitability.

Since entering into the contract in 1978, Maki has developed four springs, installed more than 3 miles of pipeline and nine water troughs, put in nearly 3½ miles of cross fences dividing 6 pastures into 12, and reestablished 80 acres of hayland. Thus far he has emphasized improving his range rather than trying to increase cattle numbers, but he expects to eventually be able to increase that by 10 percent.

"The Great Plains contract has allowed me to balance out my grazing," he said, "eliminating overgrazing and undergrazing." He said the range improvements have already made proper grazing rotation possible and attracted more game animals.

Maki operates under a rest-rotation grazing system. He tries not to let the cattle graze the same field at the same time of year, year after year, and he tries to rest one or two fields each year. In areas where the range condition is not as good as he would like, he tries to limit grazing to one short period a year.

To reduce the grazing pressure on his native range, Maki plans to develop 25 acres of tame pasture for early spring grazing. He seeded 9 acres of the tame pasture in the spring of 1986, and, although damaged by grasshoppers, this planting still produced an excellent stand.

Maki said his GPCP contract makes it easier for him to plan several years ahead.

The contract requires long-term planning, but is flexible enough so that planned items can be rescheduled and new conservation practices added if needed.

Another feature Maki likes about the contract is being able to obtain technical assistance and oversee or do the jobs himself.

In 1984, the Cascade County Conservation District named Maki Cooperator of the Year. "The Great Plains contract has helped to improve the productivity of our land," Maki said, "while preserving the land for future generations and improving wildlife habitat."

Farmers and ranchers in 519 counties in 10 States are eligible to participate in the Great Plains Conservation Program. Contracts run from 3 to 10 years and can provide up to \$35,000 per contract in cost-sharing assistance.

Wendell Martinell,
district conservationist, SCS, Great Falls, Mont.

Cattle Help Stamp Out Leafy Spurge

Cattle might prove more cost-effective than chemicals for controlling leafy spurge.

Gene Foss used to spend about \$32 per acre per year for the chemical control of leafy spurge on his ranch south of Culbertson, Mont. His cows are now stamping this weed out for free.

Foss' idea for using cattle instead of chemicals goes back to when he first noticed forage grasses growing in tire tracks across a patch of spurge. Later he observed that there was no leafy spurge in his cattle trap, where cattle are concentrated for 2 or 3 days a year, but that it dominated the plant community on the other side of the fence.

These observations led the rancher to conclude that leafy spurge cannot tolerate physical impact—like that caused by the weight of a vehicle or cow. If leafy spurge cannot tolerate physical damage, Foss reasoned, then he ought to be able to control it that way.

As a long-time cooperator with the Richland County Conservation District,

Foss was in the process of implementing a new time-control grazing program. This provided a perfect opportunity to test his idea about controlling leafy spurge.

He divided 8,400 acres into 21 pastures, grouped his cattle into one herd, and began moving them through the pastures in a planned manner. He then added more cattle to his herd until the density was increased to at least 2 cows per acre.

The grazing cows, however, were careful where they placed their feet and caused little damage to the leafy spurge. "In the first grazing periods," Foss said, "the cattle didn't do the physical damage that I wanted to the spurge."

Foss then placed mineral supplements in the leafy spurge patches to stimulate herding behavior. In getting to the supplements, the cattle trampled the spurge plants, breaking off their stems and killing them. As a result, grass seedlings soon became established in areas previously infested with the spurge.

This effort at weed control is part of a holistic resource management plan that Foss adopted in March of 1985. According to the plan, Foss times the grazing in his pastures according to the plant growth rate, the quality of the forage, and the number of total pastures, which he plans to increase to 40 by 1987. He rests each pasture for 30 to 90 days, depending on the growth rate of the plants, until it has recovered from the initial grazing. This procedure allows for animal impact on the land and reduces the stress of grazing on the forage plants.

Foss believes that the repeated animal impact built into the plan will eliminate spurge's dominance on his ranch and allow desirable forage plants to increase. His progress has generated considerable interest among other ranchers in the area and the Soil Conservation Service.

"Many ranchers have successfully controlled brush species this way," said Arnold Norman, area resource conservationist for SCS. "Foss seems to have a good start at controlling his leafy spurge."

Mark Parman,
soil conservationist, SCS, Circle, Mont.

SCS to Revise Guidelines on Designing Open Channels

New developments in geomorphology will help the Soil Conservation Service to more effectively deal with channel erosion—and save landowners money.

Geomorphology is the study of the way landscapes evolve. By studying the different stages of landforms and stream systems, geomorphologists can tell a lot about a landscape's past and make many predictions about its future. SCS engineers are finding that they can use this geomorphic approach to determine the most effective locations to apply conservation measures to open channels.

Open channels are waterways commonly used for flood protection, drainage, irrigation, diversion of water to control erosion and sedimentation, and recreation. SCS provides technical assistance to landowners in the design and planning of floodways and other open channels where channel erosion is of primary concern.

The conventional engineering approach to stream channel erosion concentrates on present stream conditions, such as water volume and velocity, rate of sediment deposition, and soil properties of the streambanks. Once these conditions are known, engineers design structures to reduce erosion and maintain channel boundaries. This rigid-boundary approach is particularly appropriate in urban or built-up areas where stream boundary changes or flooding would cause extensive damage.

Most rural landscapes, however, contain landforms and stream systems that are in a state of slow transition. They may be eroding, filling, stable, healing, or beginning to become unstable. The goal of the geomorphic approach is to bring the channel into a state of dynamic equilibrium with the landscape. This means that erosion and sediment deposition are both anticipated and tolerated within certain limits. Rather than trying to stop all boundary changes and creating a situation where any change would be a failure, the

geomorphic approach tries to keep changes small and in harmony with the evolving landscape.

Researchers at Colorado State University demonstrated several years ago that geomorphic principles can be used to predict stream erosion and deposition in arid and semiarid areas. Encouraged by this research, SCS joined with the U.S. Department of Agriculture's Agricultural Research Service and the U.S. Army Corps of Engineers to test the principles in managing the more humid Yazoo River Basin in Mississippi. Additional field trials were later made in the Muddy Fork Watershed of Silver Creek in Indiana. These tests have proven so successful that SCS is incorporating the geomorphic approach in a revision of its engineering manual on the design of open channels (Technical Release No. 25).

The geomorphic approach involves a thorough observation of the entire landscape to determine which stream segments are most subject to change, which are eroding but likely to heal, and which are in dynamic equilibrium. Under this approach, the best location for a conservation measure may not be where erosion is currently the most active.

Compared to the rigid-boundary approach, the geomorphic approach requires considerably more time for geologic inventorying and more hydrologic data. Landowners and project sponsors must make more decisions on how much change they are willing to accept, but can often realize dramatic savings in construction costs because the geomorphic approach usually results in fewer—but more strategically located—structures.

By combining the two approaches, SCS hopes to produce a method that is better than either in its pure form. In their pure forms, the geomorphic approach could result in letting a channel recklessly adjust on its own, and the rigid-boundary approach could result in a frustrating effort at total structural control. The combined approach will integrate the two and use geomorphic data on channel evolution and response to aid in the selection of the

Iowa Study Shows High Off-Site Costs of Soil Erosion

most effective structure types, locations, and times of installation. It will guard against extremes.

Geomorphic data will be used by SCS engineers in nearly all of the work they perform on open channels. This includes: (1) predicting the impacts of channel and watershed changes, (2) planning and designing channel changes, (3) planning and designing remedial work on channels, (4) predicting rates of gully and stream erosion, and (5) predicting the effect of stream and gully erosion on areas influenced by sediment.

It is expected that channel geomorphology studies will soon be as valuable for planning stream modifications as soil surveys are for conservation planning or foundation geologic investigations and soil mechanics tests are for structure foundation treatment and design.

C. Donald Clarke,
national sedimentation geologist,
SCS, Washington, DC

SCS Provides Emergency Flood Assistance in New Jersey

During 1984, New Jersey experienced one of the wettest and stormiest springs in its history. Two storms hit within 60 days. The first storm occurred April 5 and 6, when nearly 6 inches of rain fell on already saturated ground. The result was heavy runoff and severe flooding. Thousands of people evacuated their homes, and receding floodwaters revealed severely eroded streambanks that threatened houses and roads.

In the community of Pompton Lakes, the Ramapo River scoured its 12-foot banks to within 3 feet of one residence. Property damage along one part of the river was estimated at close to \$1 billion. This damage was compounded by a second recordbreaking storm that swept across the area over the Memorial Day weekend.

Local leaders contacted the Federal Emergency Management Agency (FEMA) for assistance. FEMA coordinates emergency assistance following floods and other disasters. The Soil Conservation

Service, in cooperation with FEMA, provides technical and financial assistance whenever fire, flood, or other natural disaster causes sudden damage in a watershed. To safeguard lives and property, SCS undertakes emergency measures to retard runoff and reduce soil erosion and sedimentation.

SCS responded quickly to FEMA's and the community's request for emergency assistance by contracting for and supervising the installation of more than 1,000 cubic yards of riprap to stabilize the banks of the Ramapo River. Another 2,000 cubic yards of riprap was applied to stabilize streambanks along the Pequannock River. Four sites along Foulertons Brook, which runs through the town of Roseland, were stabilized with 760 cubic yards of gabions.

Nancy Paolini, SCS project inspector for the work along the Pequannock River, said, "It's not easy to picture erosion occurring at such an alarming rate that some people lost 15 feet of their backyards." The banks at this location were stabilized with riprap, and 4-foot diameter boulders were placed in some areas.

As a result of the floods of 1984, many people in the northeastern part of New Jersey are more aware than ever of the natural forces at work in the streams that flow through their cities and towns. They are also more aware of the assistance provided by the U.S. Department of Agriculture—through SCS and FEMA—in recovering from flood damage and minimizing its recurrence.

Barbara L. Maus,
public affairs specialist, SCS, Somerset, N.J.

We've always known that soil erosion on farms causes problems downstream," said Mike Nethery, Soil Conservation Service State conservationist in Des Moines, Iowa, "but for the first time we've estimated the costs of specific types of damage, and they're very high."

A recent Iowa study, "Off-Site Costs of Erosion," lists the total annual damage from sedimentation at more than \$32 million: \$8 million in cleaning out road ditches; more than \$13 million in cleaning out blocked drainageways on farmland; \$10 million in the loss of recreation use of streams and lakes; and \$1 million in additional treatment of municipal water supplies.

SCS heads the interagency team that began work on the study in 1985, using special Soil and Water Resources Conservation Act funds. The Center for Agricultural and Rural Development (CARD) at Iowa State University gathered cost data on sediment damage from county engineers, State agencies, city water treatment officials, and others.

"Those cost estimates tell only part of the story," Nethery said. "They're current annual costs to correct the worst off-site damages caused by soil erosion, not to correct all of them. Correcting all of the problems would cost about double the amount being spent now."

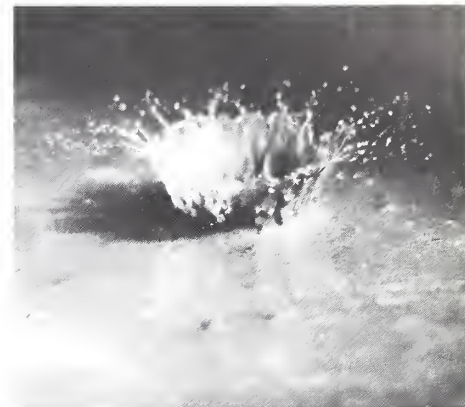
"The \$32 million of mostly public funds that Iowa is spending to correct only some of the damage caused by off-site soil erosion is more than twice what is being spent in Federal, State, and county cost-share funds each year to prevent soil erosion in the first place."

Lynn Betts,
public affairs specialist, SCS, Des Moines, Iowa



Top: In Iowa, a work crew removes sediment from eroding cropland from road ditches.
 Left: Sediment and accompanying nutrients from off-site erosion enter Union Grove Lake in central Iowa boosting algae growth and reducing the lake's water-holding capacity and its value for recreation.
 Above: Excessive algae growth in Union Grove Lake leads to stunted growth in panfish.

Control the Splash



The raindrop splash on bare earth—the beginning of soil erosion and sediment problems—will be featured in television public service announcements across the Nation this winter.

"Control the splash and you ease sediment problems in our lakes and streams" is the message of a series of 30-, 20-, and 10-second spots. The spots were distributed to Soil Conservation Service State offices in late September.

The Iowa SCS State office produced the television spots as part of an effort to publicize the off-site costs of soil erosion. The U.S. Department of Agriculture's Video and Film Unit and the SCS National Headquarters Public Information Staff helped film, edit, and distribute the spots.

Moving?

Send present mailing label and
new address including zip code to:

U.S. Department of Agriculture
Soil Conservation Service
P.O. Box 2890, Room 6202-S
Washington, DC 20013-2890

Official Business
Penalty for private use, \$300

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WASHINGTON DC
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New Publications

Conservation Districts into the 1990's

by the National Association of
Conservation Districts

In the mid-1960's, the National Association of Conservation Districts (NACD) appointed a special committee on district outlook to examine districts' accomplishments, their authorities, and their potential to address the resource needs in the future. This is the third report issued by that committee.

Based on surveys of State conservation agencies, conservation districts, and district officials, the report outlines committee recommendations for future action by the Nation's nearly 3,000 soil and water conservation districts.

In the report, the committee recommends that districts: develop work plans based on high priority problems, taking manpower and funding into account; actively recruit new conservation cooperators; establish comprehensive resource conservation programs; arrange for State soil conservation agencies to provide leadership training for district officials; establish a legislative network to strengthen district programs; and seek new sources of funding for district programs. Further, the report recommends that districts should work actively with local schools to develop conservation education curricula and should encourage participation of minority groups, women, and young people.

Single copies are available from the NACD Service Department, P.O. Box 855, League City, Tex. 77573.

Lands of Brighter Destiny: The Public Lands of the American West

by Elizabeth Darby Junkin

Millions of acres of land in the western United States (national parks, forests, wilderness, and range) is public land—it belongs to all citizens. In this book, the author first reviews the history of the laws and the Federal agencies that control these lands. Next, the author interviews residents and those political figures whose influence and dreams are the philosophic roots of future decisions about these western lands. In conclusion, the author believes that an agreement must be reached on a land ethic for the future management of these western public lands.

This book is available for \$13.95 from Fulcrum, Inc., 350 Indiana Street, Suite 510, Golden, Colo. 80401.

Hazardous Waste Management: Reducing the Risk

by Benjamin A. Goldman,
James A. Hulme,
and Cameron Johnson

This report on a 2-year study by the Council on Economic Priorities (CEP) rates the performance of 10 toxic waste disposal sites. The report cites cases where hazardous waste has been inadequately handled. CEP's motives are to help government officials better protect our population, to help toxic waste generators determine where they might dispose of toxic wastes more safely, and to help the waste disposal companies know what constitutes a good job.

CEP is an independent, non-profit, public research organization founded in 1969. CEP studies the environment, national security, and corporate social responsibility. It is funded by individual members and foundations.

Single copies of this book are available for \$34.95 (plus \$2.50 postage and handling), from Island Press, Dept. B, Box 53406, Washington, DC 20009.

Two newsletters, *Busting the Shell Game* by Benjamin Goldman and *Management is the Key* by Cameron Johnson, are available from CEP without charge.

Robots of Cave Alpha: Creating a Livable Land

by the Soil Conservation Society
of America

One in a series of educational cartoon booklets published by the Soil Conservation Society of America, *Robots of Cave Alpha: Creating a Livable Land*, emphasizes that people must be knowledgeable about the environment, about who makes environmental management decisions, and about how those decisions are made. The booklet, designed for the upper elementary grades, and accompanying teacher's guide is written to help young people understand how environmental management decisions are made and what individuals, small groups, and governments can do to influence the quality of life for citizens.

The adventure story introduces young people to current environmental issues, such as urban beautification and restoration, farmland preservation, water quality, soil erosion, air pollution, and the reclamation of mined land.

The booklet's story line finds three children stumbling onto a cave filled with robots and the world's smartest computer, which is designed to help rebuild a quality life on Earth after a worldwide disaster. Questioned by the robots, the children learn that rebuilding a quality environment requires many difficult and conflicting decisions.

The accompanying teacher's guide includes background information, 4 activity masters, and 15 alternative activities designed to help teachers tailor the lesson to meet the needs of the students.

Single copies of the cartoon booklet are available for 75 cents, and single copies of the teacher's guide are \$2, from the Soil Conservation Society of America, 7515 Northeast Ankeny Road, Ankeny, Iowa 50021. Substantial discounts are available on quantity purchases of both the booklet and teacher's guide.

Interaction of Soil Minerals with Natural Organics and Microbes

Edited by P.M. Huang
and M. Schnitzer

Written by more than 30 international specialists, this publication identifies present and future research needs and attempts to stimulate new research leading to further integration of knowledge about soil minerals, natural organics, and microbes and their effects on soil development, agricultural production, and environmental protection.

This book should prove to be a valuable reference for students, scientists, researchers, and instructors in the soil and environmental sciences.

This 606-page book (Special Publication Number 17) is available for \$30 from Soil Science Society of America, Book Order Department, 677 South Segoe Road, Madison, Wis. 53711.